

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. APP. NO. 19/799,890

Please delete the present Abstract of the Disclosure.

Please add the following new Abstract of the Disclosure:

A frequency error detection apparatus and method based on histogram information of an input signal. The apparatus includes an A/D converter for converting an analog signal into digital values; a zero crossing point detector for detecting sign changes of the digital values, and detecting zero crossing points; a period information detector for detecting period information which is the number of the digital values corresponding to a periodic signal; a histogram information calculator for counting the number of detections for the respective period information based on the period information, and calculating error-detection-target histogram information; and a frequency error calculator for detecting a difference between the error-detection-target histogram information and a reference histogram information, and calculating a frequency error value based on the difference. This can shorten time for frequency error detections and improve accuracy of the detected frequency error value.